Manchester Public Schools

Grade 3: Building a Community of Mathematicians

UNIT OVERVIEW

GENERAL INFORMATION

Terms:		**Duration:**	20.0 Day(s)	**Start Date:**	08-26-2015	**Finish Date:**	09-23-2015
Subjects:	Mathematics	**Interdisciplinary Approaches:**	STEAM	**Courses:**	ELEM-MA-Mathematics - Grade 3		
Year Level(s):	3			**Unit No.**	MPSDC-025220		
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UNIT FOCUS

This launch unit is designed to introduce students to the routines of math workshop and to the rigor of the Connecticut Core Standards. The unit allows for reteaching and time to establish routines necessary for building a classroom community. Students will learn to follow agreed upon rules for speaking and listening as they begin to build the stamina needed to endure the practice time of math workshop. The purpose of the unit is to familiarize students with the routines and procedures that will be necessary in order for students to successfully meet the Connecticut Core Standards and actively participate in math workshop. Within this unit, you will need to assess students using the District Benchmark Assessment.

PRIOR LEARNINGS / CONNECTIONS

The creation of a numeracy environment is the foundation of math workshop. It is important to invest time and attention in creating supportive classroom communities. Students should connect prior experiences with math workshop, including but not limited to:
Classroom Community: Teachers and students work collaboratively in an atmosphere of mutual respect; students are motivated to do their best work and feel safe to take risks. The class functions as a learning community where each student's learning is important, i.e., students take responsibility for learning and support others.
Physical environment: Purposeful arrangement of the environment facilitates development of a numeracy environment. Students have independent access to resources and the arrangement of the room facilitates collaboration.
Predictable structure: The math block should be at least 60 minutes. Maintenance of a predictable structure is essential if students are to become self-managing.

ADDITIONAL INFORMATION

RESOURCES

No.	Description	Files / Links
RES1	Number Talk: Helping Children Build Mental Math and Computation Strategies, Sherry Parrish - Teacher Resource	
RES2	Teaching Student Centered Math K-3 by John A. Van de Walle - Teacher Resource	
RES3	Teaching Student Centered Math K-3 (Van de Walle) - Blackline Masters	http://www.ablongman.com/vandewalleseries/Vol_1_BLM_PDFs/V1%20All%20BLMs.pdf (link)
RES4	Guided Math In Action K-5 by Dr. Nicki Newton - Teacher Resource (First 20 Days)	https://drive.google.com/a/mpspride.org/file/d/0B1u-SudncFHQRDBlZW1xemRXVHM/view?usp=sharing (link)
RES5	Problem Solving with Math Models:Grade 3, Dr. Nicki Newton, Giggle Publications - Teacher Resource	
RES6	Mathematical Practice - Look Fors - Teacher Resource	https://drive.google.com/a/mpspride.org/file/d/0B6yqp2quUBXKYlc1NEZOS1dvZ3c/view?usp=sharing (link)

RES7	Illustrative Mathematics - Classroom Supplies -	https://www.illustrativemathematics.org/content-standards/tasks/1315 (link)
RES8	K-5 Math Teaching Resources -	http://www.k-5mathteachingresources.com/3rd-grade-number-activities.html (link)
RES9	Howard County Public Schools -	https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.OA.1 (link)
RES10	Renerek Activities - K-5 Math Resource Page	http://www.k-5mathteachingresources.com/Rekenrek.html (link)
RES11	Mental Math Activities - K-5 Math Resource Page	http://www.k-5mathteachingresources.com/mental-math.html (link)
RES12	Common Core Flip Book -	http://www.k-5mathteachingresources.com/mental-math.html (link)
RES13	CCSS Math Focus K-8 -	https://drive.google.com/a/mpspride.org/file/d/0B6yqp2quUBXKRlM1a2MteHFxaTQ/view?usp=sharing (link)
RES14	K-8 Publishers' Criteria for CCSS for Math -	http://www.corestandards.org/assets/Math_Publishers_Criteria_K-8_Summer%202012_FINAL.pdf (link)
RES15	CCSS Standards for Mathematical Practice -	http://www.corestandards.org/Math/Practice/ (link)
RES16	CCSS Progressions -	http://ime.math.arizona.edu/progressions/ (link)
RES17	UCONN - Bridging Practices Among CT Math Educators -	http://bridges.education.uconn.edu/repository/ (link)
RES18	Year Long Curriculum Map -	https://drive.google.com/a/mpspride.org/file/d/0B6yqp2quUBXKVkZWLUNOTWxnY2c/view?usp=sharing (link)

COMMENTS / NOTES

STAGE 1: DESIRED RESULTS – KEY UNDERSTANDINGS

ESTABLISHED GOALS

Curriculum

Common Core Standards

Mathematics : 3

2000103 Mathematical Practices

- CCSS.MATH.MP.6 Attend to precision.
- CCSS.MATH.MP.1 Make sense of problems and persevere in solving them.
- CCSS.MATH.MP.3 Construct viable arguments and critique the reasoning of others.

Mathematics : 2

- 920245 Number & Operations in Base Ten
- 920259 Measurement & Data
- 920237 Operations & Algebraic Thinking

Other Goals

Learning Personalized

- Element 3: Mindsets

TRANSFER

Students will be able to independently use their learning to ...

T1
Students will be able to independently use their learning to interpret and persevere in solving mathematical problems using strategic thinking and expressing answers with a degree of precision appropriate for the problem context.
T2
Students will be able to independently use their learning to express appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others, and attending to precision when making mathematical statements.

MEANING

UNDERSTANDINGS

Students will understand that ...

U1
Mathematicians have strategies, routines and responsibilities in math workshop that contribute to a successful math community.
U2
A strong math community is built through sharing and respecting other's ideas and abilities.
U3
Mathematicians use the 8 Mathematical Practices.
U4
Addition and subtraction have an inverse relationship.
U5
Different strategies can help us solve addition and subtraction problems.
U6
Good math thinkers use math to explain why they are right and can talk about the math others do as well.

ESSENTIAL QUESTIONS

Students will keep considering ...

Q1
How do mathematicians work together during Math Workshop?
Q2
How do good mathematicians communicate their ideas?
Q3
What do good mathematicians do?

ACQUISITION OF KNOWLEDGE AND SKILL

KNOWLEDGE

Students will know ...

K1

SKILLS

Students will be skilled at ...

S1

	What a math community is K2 The expectations for Math workshop, including rules, rewards and consequences. K3 What good mathematicians do, i.e., use tools, strategies, communicate thinking, etc.	Following rules and routines during Math Workshop S2 Using a variety of math tools and strategies S3 Communicating their mathematical thinking S4 Actively listen to teacher and classmates S5 Using math to construct viable arguments and critique the reasoning of others S6 Demonstrating behaviors/habits of mind consistent with the 8 Mathematical Practices

STAGE 2: ASSESSMENT EVIDENCE

PERFORMANCE TASK(S)

Coding	Code	Evaluative Criteria	Description

OTHER EVIDENCE

Coding	Code	Evaluative Criteria	Description
	OE1		**Name:** enVision 2.0 (Optional) **Due Date:** 10-15-2015 **Assessment Evidence:** Optional enVision Placement Assessment - 1 day

STAGE 3: LEARNING PLAN

PRE-ASSESSMENTS

District Benchmark Assessment (September 8 - October 6)

Coding	Code	Description of Learning Activity	Extension / Modification
	LE1	**Duration:** 20.0 Day(s) **Activity:** Follow Nicki Newton's "The First 20 Days of Guided Math" from Guided Math in Action; Use enVision 2.0 animated videos to review Grade 2 major clusters (as needed); Review 8 Mathematical Practices (as needed); and Supplement instruction with additional resources.	
	LE2		

	LE3	**Duration:**
		1.0 Week(s)
		Activity:
		Week 2: Math Workshop Routines
		• Introduce Number Talks (using "Number Talks" by Sherry Parrish); incorporate Grade 2 review content
		  • Go over the "structure/rules" of a number talk
		  • Emphasize things that were discussed in week 1, such as how to listen, discuss their thinking, show their work...
		• What happens during the mini-lesson
		  • Learn a concept, read a short book, watch a mini-video...
		  • Student's role is to listen, talk with each, and participate
		• Introduce math centers (VERY IMPORTANT TO SPEND AMPLE TIME ON ALL OF THESE COMPONENTS AS THIS WILL SET THE "TONE" FOR THE ENTIRE YEAR); set up centers that review Grade 2 standards mentioned above
		  • How to take out math centers
		  • The importance of respecting supplies/materials
		  • How to work well together and resolve any problems that come up
		  • How to decide who goes first if playing a game
		  • Practice playing different games/activities
		  • Designate rules for centers
		  • Sometimes students will work independently, with partners, and/or in groups	

	LE4	**Duration:**
		1.0 Week(s)
		Activity:
		<u>Week 3</u>
		
		• Start to pull guided groups (first review routines/procedures about using manipulatives, playing games, and working together)
		  • Students will work in math centers
		• "Debrief" and discuss how Math Workshop is going
		  • Students can reflect in their math journals
		  • Share out whole class
		  • Keep reinforcing routines (stopping to review whenever necessary)	